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Notice of Allowability	Application No.	Applicant(s)	
	09/590,332	COWLEY ET AL.	
	Examiner	Art Unit	
	Sudhanshu C. Pathak	2634	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to August 18th, 2004.
2. ☒ The allowed claim(s) is/are 16-25, 27-29, 31-55 and re-numbered as claims 1-38 respectively.
3. ☒ The drawings filed on November 6th, 2003 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).**
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|---|--|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 2. <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 6. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____. |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date _____ | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____. |

DETAILED ACTION

1. Claims 16-25, 27-29, 31-55 are pending in the application.
2. Claims 1-15 & 30 have been cancelled.

EXAMINER'S AMENDMENT

3. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Alan Israel on September 24th, 2004.

- In order to avoid a "Prior Art" rejection, Claim 16 has been amended as follows:

Claim 26 has been cancelled. The limitation of claim 26 has been included in Claim 16, thus the claim has been cancelled.

In Claim 16, line 6, replace "input of said first multiplier," with

.....input of said first multiplier, said first oscillator having a control input.....

In Claim 16, lines 7-8, replace "outside said first frequency band," with

.....outside said first frequency band, said first and second oscillators forming part of a first phase-locked loop which comprises a first programmable divider, a first comparator having an output, a first input connected via said first programmable divider to said first oscillator, and a second input connected to said second oscillator, and a first control loop connected between said output of

said first comparator and said control input of said first oscillator, said first control loop comprising an amplifier and a loop filter whose bandwidth is at least as large as the bandwidth of the input signals supplied to an antenna input;.....

In Claim 31, line 14, replace "of said first oscillator" with

.....of said first oscillator, said first control loop comprising an amplifier and a loop filter whose bandwidth is at least as large as the bandwidth of the input signals supplied to an antenna input.....

In Claim 43, line 13, replace "said control input of said first oscillator" with

.....said control input of said first oscillator, said first control loop comprising an amplifier and a loop filter whose bandwidth is at least as large as the bandwidth of the input signals supplied to an antenna input.....

In Claim 43, line 13-14, delete "and having a bandwidth which covers said first frequency band".

Allowable Subject Matter

4. Claims 16-25, 27-29, 31-55 and re-numbered as claims 1-38 respectively are allowable over the prior art of record because the cited references do not contain the specified limitation of a digital tuner comprising a single frequency changer of one of a zero intermediate frequency changer and a near-zero intermediate frequency changer, said frequency changer comprising an oscillator arrangement; a first multiplier having a first input for receiving an input signal in a first frequency band, and a second input connected to said oscillator arrangement; and said oscillator arrangement comprising a first oscillator for

supplying a first signal in said first frequency band to said second input of said first multiplier, said first oscillator having a control input, a second oscillator for producing a second signal in a second frequency band outside said first frequency band, said first and second oscillators forming part of a first phase-locked loop which comprises a first programmable divider, a first comparator having an output, a first input connected via said first programmable divider to said first oscillator, and a second input connected to said second oscillator, and a first control loop connected between said output of said first comparator and said control input of said first oscillator, said first control loop comprising an amplifier and a loop filter whose bandwidth is at least as large as the bandwidth of the input signals supplied to an antenna input.


Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sudhanshu C. Pathak whose telephone number is (571)-272-3038. The examiner can normally be reached on M-F: 9am-6pm.
- If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on (571)-272-3056
 - The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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- Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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